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ABSTRACT

This document contains 143 competencies, grouped into 25 units, for tech prep programs in the interactive media technologies cluster. The competencies were developed through collaboration of Ohio business, industry, and labor representatives and secondary and associate degree educators. The competencies are rated either "essential" (necessary to ensure minimal levels of employability by entry employees, must be included in all new tech prep programs), or "recommended." Competency builders are included for each competency. Some of the groups of competencies covered in the units include the following: employability skills; professionalism; teamwork; professional practices; workplace safety; project management; problem analysis; general administrative functions; economic and business principles; basic computer concepts and applications; customer relations; market research; business management; business law; writing; appreciation of the arts; programming; introduction to interactive media; graphic design fundamentals; photography; computer graphics, digital imaging, and animation; video and film production; audio production; web page design; and interactive media production. (KC)

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ED 421 657

TECH PREP

Interactive Media Technologies

State Competency Profile

January 29, 1998
Lorain Community College

CE076924

U.S. DEPARTMENT OF EDUCATION
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TECH PREP

Interactive Media Technologies
State Competency Profile

This document is the result of collaboration between a number of individuals and organizations. The Ohio Department of Education and the Ohio Board of Regents provided financial and staff support for the development of the document. Ms. Linda Fauber, Lakeland Tech Prep Consortium, coordinated the development of the initial document upon which the current document is based and drafted key units on interactive media technology. Guidance in document development was provided by a futuring panel composed of Ohio Business, Industry and Labor Representatives. (See attached list of Futuring Panel Members.)

The current document is a result of a review by a state panel of business/industry/labor representatives and secondary/associate degree educators on January 29, 1998. (The name and institutional affiliation of each panel member is provided on the following pages.) Jan Eley, Akron Area Tech Prep Consortium and Linda Fauber, Lakeland Tech Prep Consortium served as meeting facilitators. They were assisted by Julie Daugherty, Eastern Ohio Valley Tech Prep Consortium, Larry Casterline, Tech Prep Curriculum Services Consultant, and Erma Brobst, Tech Prep Curriculum Services.

As you review the document, keep in mind the following:

Essential Competencies

Those competencies marked *Essential* in the State Competency Profile were determined by the statewide business/industry/labor panel to be necessary to ensure minimal levels of employability. Entry level employees should be able to perform this competency without supervision; therefore, students must be proficient in these competencies at least by the end of the Associate Degree.

Essential competencies must be included in all new Tech Prep programs. Tech Prep consortia with current programs in this area will be expected to phase-in essential competencies into their programs as well.

Wording of essential competencies may not be altered. The leveling may only be changed to deliver the competency earlier during the educational process. For example, the leveling of an essential competency in the State Competency Profile may be altered locally from a P or Proficiency leveling at the end of the Associate Degree to a P or Proficiency by the end of the 12th grade. The reverse is not permissible. For example, a competency leveled P or Proficient by the end of the 12th grade in the State Competency Profile cannot be changed locally to a P or Proficiency by the end of the Associate Degree. For additional information on leveling of competencies, refer to the Leveling Code Sheet in your booklet.

Competency builders are intended to help define each competency; therefore, the builders may be modified as long as that modification does not change or dilute the intent of the State Panel.

Issues which arise regarding delivery of the *essential* competencies once the program is implemented will be addressed by a State review panel of business/industry/labor and education representatives with possible revisions to the State Competency Profile at a later date. Any issues identified during the local verification meeting should be conveyed to Tech Prep Curriculum Services by the consortium coordinator.

Recommended Competencies

The competencies marked *Recommended* are suggested additions to the State Competency Profile. Each of these competencies should be reviewed during a local competency profile meeting; with a joint panel of business/industry/labor and education representatives deciding whether to include each competency in the local curriculum. The decision should be based upon a consideration of local business needs, as well as priorities and time constraints of the educational process. Wording and leveling of all recommended competencies and builders may be modified.

Additional Units/Competencies/Builders

Competencies and/or builders may be added to any unit in the State Competency Profile. Additional units may also be added.

Occupation Definitions

Skills may be added to the occupational definitions based on the modifications made during the competency review. Because the definition is based on the skills detailed in the competency profile, only minor modifications should be necessary.

For additional information about this State Tech Prep Competency Profile contact:

Tech Prep Curriculum Services
Center on Education and Training for Employment
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210-1090
(614) 292-8404

Interactive Media Technologies Futuring Panel
January 12, 1998
Columbus, Ohio

Linda B. Fauber
Panel Facilitator

Bob Hill, Adjunct Instructor
Music and Multimedia Departments
Lakeland Community College
Kirtland, Ohio

Barbara L. Helfer, Director
College of the Arts Emerging Technologies Studio
The Ohio State University
Columbus, Ohio

Henry Shilling, Director
Fitch, Inc.
Worthington, Ohio

Jim Morrison, Director
Multimedia Production
American Greetings
Cleveland, Ohio

Harry Searles, Supervisor
Multimedia Production Curator and Design Division
Ohio Historical Society
Columbus, Ohio

Marsh Williams, Director
New Media and Internet Solutions
Mills James Productions
Columbus, Ohio

Interactive Media Technologies
State Competency Profile Meeting

Business Participants

Sandy LaCorte, Owner
Lacorte & Company, North Olmsted, Ohio

Steve Sullivan
NCR Multimedia Resources, Dayton, Ohio

Jeffrey Bulter, Manager
American Greetings, Cleveland Ohio

David Watkins, President
Impact Communications, Cleveland, Ohio

Mike Neider, Marketing Director
Marinar Technology Company, Painsville, Ohio

Ed Skimin, Owner
Emerge Inc.. Elyria, Ohio

Chris Fregetto, Art Director
Adlink, Elyria, Ohio

Interactive Media Technologies
State Competency Profile Meeting

Educator Participants

Cathy Armetta, Instructor, Math
Auburn Career Center, Concord, Ohio

Barbara Bates, Associate Professor, Physical Science Department
Lakeland Community College, Kirtland, Ohio

Karl Bremer, Instructor, English & Multimedia
Kettering Fairmont High School, Dayton, Ohio

Lovette Chinwah, Assistant Professor of Communication Arts
Sinclair Community College, Dayton, Ohio

Bruce Cline, Department Chair, Photography Department
Lakeland Community College, Kirtland, Ohio

Laurie Crowther, Instructor, English
Marion L. Steele High School, Amherst, Ohio

Donald Davis, Assistant Professor, Mathematics Department
Lakeland Community College, Kirtland, Ohio

Karen Erisman, Instructor, Math
Kettering Fairmont High School, Dayton, Ohio

Bob Hill, Adjunct Instructor, Music and Multimedia Departments
Lakeland Community College, Kirtland, Ohio

Tracy Jayne, Web Graphics Specialist
Sinclair Community College, Dayton, Ohio

Jeff Koleno, Instructor, Developmental Education Department
Lorain County Community College, Elyria, Ohio

Peter Oberson, Superintendent
Auburn Career Center, Concord, Ohio

Dino Pappas, Instructor, Graphic Arts
Lorain Southview High School, Lorain, Ohio

Sue Roseum, Instructor, Physics
Auburn Career Center, Concord, Ohio

Dennis Ryan, Instructor, Arts & Humanities Department
Lorain County Community College, Elyria, Ohio

Philip Skerry, Professor, Composition/Language/Literature Department
Lakeland Community College, Kirtland, Ohio

Mike Smith, Associate Professor, Develomental Math & Science
Sinclair Community College, Dayton, Ohio

Bill Struhar, Faculty Consultant, Center for Interactive Learning
Sinclair Community College, Dayton, Ohio

Tim Sumser, Instructor, Math/Computer
Marion L. Steele High School, Amherst, Ohio

Carol Wagner, Instructor, English
Lorain Southview High School, Lorain, Ohio

Jean Upson, Instructor, Multimedia
Lorain County Community College, Elyria, Ohio

* *

LEVELING CODES

* *

GRADE LEVEL

12 = by the end of grade 12

AD = by the end of the Associate Degree

DEPTH

I = Introduce (applies to at least three or 25% of the competency builders)

R = Reinforce or add depth (after introducing or proficiency)

P = Proficient (achievement of the competency **without** supervision)

ACADEMIC CODES

C = Communications related

M = Mathematics related

S = Science related

OTHER

WS = Worksite learning during the course of the Tech Prep program is recommended

Example:
P12, RAD, WS
Competency: XXXXXXX **C**

Example:
I-12, PAD
Competency: YYYYYY
Competency Builders:
YYY
XXX
ZZZ **M**

Interactive Media Specialist

An individual who applies various techniques to produce media for corporate video departments, educational institutions, and the information and entertainment industries. Technical skills should include, but not be limited to:

- television production
- computer graphics
- interactive media production
- graphic design
- recording
- digital imaging
- digital audio technology
- photography
- studio equipment maintenance
- web page design
- content research
- application design

Tech Prep
Interactive Media Technology
State Competency Profile

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Unit: Employability Skills

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Develop a career plan**

Competency Builders:

Identify current interests and aptitudes

Identify common barriers to employment

Describe strategies to overcome employment barriers

Locate resources for finding employment

Research job trends

Identify career options

Identify advantages and disadvantages of career options (in addition to monetary)

Identify job requirements

Investigate education/training opportunities (including speaking with someone in the trade)

Evaluate personal strengths and weaknesses

Refine a written educational plan which leads to a specific career field

Create career passport

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Prepare for employment**

Competency Builders:

Identify employment sources

Identify advantages and disadvantages of self-employment

Identify present and future employment opportunities (by geographic location)

Research job opportunities

Compare salary ranges and benefit packages

Compile occupational profile

Identify rights and responsibilities of equal employment opportunity laws

Demonstrate ability to accurately complete a job application

Design resume and cover letter

Target resume

Secure references

Investigate generic and specific employment tests (e.g., civil service exam; drug screening)

Use follow-up techniques to enhance employment potential

Demonstrate legible written communication skills using correct grammar, spelling, punctuation, and concise wording

Use proper diction in interviews

Describe methods for handling illegal questions on job application forms and during interviews
Write letter of application
Research prospective employer and services performed
Explain critical importance of personal appearance, hygiene, and demeanor
Interpret job description
Demonstrate appropriate interview question and answer techniques
Demonstrate methods for handling difficult interview questions using simulated role playing exercises
Describe procedures for following up after an interview
Evaluate job offers
Give notice to employer of job change
Write letter of acceptance
Write letter of declination
Demonstrate good listening skills
Ask for the job tactfully
Participate in extracurricular activities (e.g., student government, community projects)

BIL: Essential

EDU:	12	AD	AC
	P		C

Competency: **Evaluate the importance of self-esteem as an employability skill**

Competency Builders:

Identify factors that affect self-esteem

Compare effects of low self-esteem and high self-esteem

Identify strategies to promote positive self-esteem

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Demonstrate job retention skills**

Competency Builders:

Identify employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene

Exhibit appropriate work habits and attitude

Demonstrate ability to set priorities

Identify behaviors to establish successful working relationships

Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

Identify opportunities for advancement

List reasons for termination

List consequences of being absent frequently from job

List consequences of frequently arriving late for work

Demonstrate interpersonal relations skills (e.g., verbal and written)

Demonstrate negotiation skills

Demonstrate teamwork

Follow chain-of-command

Exhibit appropriate job dedication

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate knowledge of work ethic**

Competency Builders:

Define work ethic

Identify factors that influence work ethic

Differentiate law and ethics

Describe how personal values are reflected in work ethic

Describe how interactions in the workplace affect personal work ethic

Describe how life changes affect personal work ethic

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Exhibit appropriate work ethic**

Competency Builders:

Use time-management techniques
Avoid personal activity during work hours
Attend work as scheduled
Adhere to company and/or governmental policies, procedures, rules, and regulations
Exercise confidentiality
Demonstrate appropriate human relations skills
Adhere to rules of conduct
Accept constructive criticism
Offer constructive criticism
Take pride in work
Resolve conflict
Manage stress
Avoid sexual connotations and harassment
Adjust to changes in the workplace
Demonstrate punctuality
Assume responsibility for personal decisions and actions
Take responsibility for assignments
Follow chain-of-command

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Apply decision-making techniques**

Competency Builders:

Identify decision to be made

Identify possible alternatives and their consequences

Make decisions based on facts, legality, ethics, goals, and culture

Apply time factor(s)

Present decision to be implemented

Evaluate decision made

Take responsibility for decision

Identify ownership of decision to be made

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Apply problem-solving techniques**

Competency Builders:

Identify problem
Select appropriate problem solving tools/techniques
Identify root problem cause(s)
Track root problem cause(s)
Identify possible solutions and their consequences (e.g., long term, short term, crisis)
Use resources to explore possible solutions to problem
Contrast advantages and disadvantages of each solution
Identify appropriate action
Evaluate results
Identify post-preventive action

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Exhibit characteristics for job advancement**

Competency Builders:

Display positive attitude
Demonstrate knowledge of position
Perform quality work
Adapt to changing situations and technology
Demonstrate capability/responsibility for different positions
Identify characteristics of effective leaders
Identify opportunities for leadership in work place/community
Demonstrate initiative to affect change in workplace
Participate in continuing education/training program
Respond appropriately to criticism from employer, supervisor, or other employees
Exhibit awareness of corporate culture
Prepare for job setbacks
Exhibit continual growth based on performance evaluation
Set realistic goals

Unit: Professionalism

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Project professional image**

Competency Builders:

Define professionalism
Exhibit professional appearance
Exhibit professional manners
Project professional attitude
Identify individual's vital role in organization
Exhibit proper etiquette in professionally-related situations

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Formulate individual and professional goals**

Competency Builders:

Set flexible, realistic, and measurable goals
Identify potential barriers to achieving goals
Identify strategies for addressing barriers to goal achievement
Breakdown long-term goals into short-term goals
Prioritize goals
Commit to goals
Adjust goals
Obtain support for goals
Reward goal achievement

BIL: Recommended

EDU:	12	AD	AC
	I	P	M

Competency: **Organize personal finances**

Competency Builders:

Explain need for personal management records
Balance checkbook
Identify tax obligations
Analyze how credit affects financial security
Compare types and methods of investments
Compare types and methods of borrowing
Compare types and methods of insurance
Compare types of retirement options/plans
Identify discretionary vs. non-discretionary expenditures

BIL: Recommended

EDU:	12	AD	AC
	I		

Competency: **Support community well-being**

Competency Builders:

Identify environmental, educational, and social issues

Participate in social and/or community/industry activities

Participate in industry activities and organization

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Achieve organizational goals**

Competency Builders:

Evaluate personal goals in relation to organizational goals
Monitor progress by evaluating feedback
List responsibilities in relation to organizational goals
Accomplish assigned tasks
Exercise responsibility in relation to organizational goals
Set appropriate personal performance standards
Communicate goals with supervisor and peers
Demonstrate knowledge of products and services
Promote organizational image and mission

BIL: Essential

EDU:	12	AD	AC
	I	P	C

Competency: **Demonstrate positive relations in the workplace**

Competency Builders:
Identify personality types
Identify methods of working with various personalities
Identify various management styles
Support organization expectations
Support organization decisions
Accept constructive criticism
Give constructive feedback
Adapt to changes in workplace
List factors to consider before resigning
Write letter of resignation

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Manage stressful situations**

Competency Builders:

Accept stress as part of daily life

Identify personal and professional factors contributing to stress

Describe physical and emotional responses to stress

Evaluate positive and negative effects of stress on productivity

Identify strategies for reducing stress

Identify positive methods to channel stress

Implement strategies to manage stress

Create strategies for developing and maintaining support systems

BIL: Recommended

EDU:	12	AD	AC
	P	R	C

Competency: **Analyze effects of family on work and work on family**

Competency Builders:

Identify how family values, goals, and priorities are reflected in work place

Identify responsibilities and rewards associated with paid and non-paid work

Identify responsibilities and rewards associated with families

Explain how family responsibilities can conflict with work

Explain how work can conflict with family responsibilities

Explain how work-related stress can affect families

Explain how family-related stress can affect work

Identify family support systems and resources

Identify work-related support systems and resources

Communicate with family regarding work

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Apply lifelong learning skills**

Competency Builders:

Define lifelong learning
Identify factors that cause need for lifelong learning
Analyze effects of change
Identify reasons why goals change
Describe importance of flexibility and adaptability
Evaluate need for continuing education/training

BIL: Essential

EDU:	12	AD	AC
	I	P	C

Competency: **Manage professional development**

Competency Builders:

Identify career opportunities
Modify career plan
Participate in continuing education/training opportunities
Document continuing education/training
Read profession-related manuals, technical journals, and periodicals
Attend meetings, workshops, seminars, conferences, and demonstrations
Participate in professional organizations
Build personal/professional mentor relationship
Build personal/professional support system
Build professional network
Strengthen communication skills
Strengthen leadership skills
Strengthen management skills

Unit: Teamwork

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate knowledge of teamwork**

Competency Builders:

Define self-direction

Define responsibility

Define accountability

Differentiate work groups and teams (e.g., internal, external)

Identify conditions essential to teamwork (e.g., problem solving)

Explain influence of culture on teamwork (e.g., corporate, community)

Identify appropriate situations for using teams

Define team structures (e.g., cross functional, quality improvement, task force, quality circles)

Identify team building concepts

Describe characteristics and dynamics of teams

Identify characteristics of effective team leaders and members

Identify responsibilities of team members

Identify methods of involving each member of a team

Explain how individuals from various backgrounds contribute to work-related situations (e.g., technical training, cultural heritage)
Explain the purpose of facilitators
Define consensus
Define reward/recognition system
Define mutual respect
Define equality
Define "group think"
Provide feedback
Receive feedback
Define communication styles
Define management styles
Define social style

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Demonstrate teamwork**

Competency Builders:
Identify purpose of team and intended goal (include time frames)
Structure team around purpose
Define responsibilities of team members (e.g., talents, skills, abilities)
Contribute to efficiency and success of team
Work toward individual and team milestones
Analyze results of team project
Facilitate a team meeting
Assist team member(s) with problem
Monitor time frame
Stress continuous improvement
Recognize failure as part of learning

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Use teamwork to solve problems**

Competency Builders:

Identify appropriate situations for using teams
Identify quality management processes/techniques
Identify quality assurance processes/techniques
Prepare presentation (e.g., business plan & procedure)
Identify problem
Use problem-solving process in a team setting (e.g., Brainstorm, Paredo, Fishbone)
Identify resources
Gather data
Analyze data
Describe solution options
Implement solution options
Review solution
Review case studies

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Conduct team meetings**

Competency Builders:

Plan agenda
Set ground rules
Schedule meeting and location
Set time limitations
Invite appropriate personnel
Set next team meeting
Solicit outside speakers as needed
Select scribe
Select meeting leader
Facilitate ground rules
Select facilitator
Invite questions and comments and group participation
Focus team on agenda items
Assign appropriate action, budget, time frame and accountability to tasks
Monitor time
Overcome team impasse
Close meeting on time

Publish minutes in timely manner
Avoid placing individual agendas above the group's agenda

Unit: Professional Practices

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Explain professional responsibilities**

Competency Builders:

Explain the need for professional and ethical standards

Explain responsibility of the individual to apply ethical standards

Identify responsibility to client(s) and employer(s)

Explain consequences of unprofessional and/or unethical behavior

Explain importance of conflict resolution in the workplace

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Identify legal and ethical behavior**

Competency Builders:

Differentiate between legal and ethical behavior

Explain terms, principles, and characteristics of legal and ethical behavior (e.g., loyalty, discretion, solicitation, competitor, supplier)

Explain legal ramifications of breaching rules and regulations

Explain effects of unethical and/or unlawful behavior

Practice within scope of the profession

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Function as a self-managed employee**

Competency Builders:

Propose project (C)
Organize tasks
Manage time
Meet deadlines
Maintain business records (C)
Make long-term and short-term plans
Evaluate progress
Report progress (C)
Delegate project
Acquire appropriate licenses/registrations
Obtain permits and releases

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Follow intellectual property rights and copyright laws**

Competency Builders:

Explain purpose of patent
Explain purpose of copyright
Explain purpose of licenses
Explain purpose of trademarks
Explain rights of the originator
Explain rights of the public
Define confidentiality
Define proprietary
Explain legal ownership of proprietary material
Describe stock image/text usage rights
Explain negotiation of contracts
Explain reproduction licensing and residual usage

Unit: Workplace Safety

BIL: Essential

EDU:	12	AD	AC
	P	R	C,S

Competency: **Maintain safe working environment**

Competency Builders:

Describe what an MSDS sheet is

Comply with HMIS material safety data sheets (MSDS) and OSHA regulations

Comply with all MSDS regulations regarding hazardous materials

Maintain clean work area by removing waste, keeping alleyways clear, cleaning tools, and preventing spills

Minimize workplace causes of environmental burdening, pollutants, and poisoning

Describe pollution solution limits imposed by permits and regulations

Comply with regulatory guidelines in handling, labeling, and disposal of solutions (e.g., fountain chemicals, inks, wash-up solutions, drum grounding)

Identify visual equipment controls (e.g., monitors, read outs)

Identify auditory equipment controls

Comply with workplace safety rules and procedures

Comply with personal safety rules and procedures
Comply with applicable electrical, mechanical, hydraulic and pneumatic safety rules and procedures
Recycle appropriate materials
Use preventive maintenance checklists
Identify location of control panels, shut-off valves, and fire extinguishers

BIL: Recommended

EDU:	12	AD	AC
		I	

Competency: **Demonstrate knowledge of ergonomics**

Competency Builders:

Define ergonomics
Define risk factor
Define maximum permissible limit (MPL) and action limit (AL) for lifting
Define cumulative trauma disorder (CTD)
Identify susceptibility factors for CTD
Minimize extreme joint movement
Minimize use of excessive muscle/physical force
Minimize repetitive tasks
Minimize mechanical stresses (e.g., sharp edges, heat, cold, hard surfaces, weights, vibration)
Minimize awkward body positions
Explain use of rest pauses
Explain need for mats and footrest for standing jobs
Explain need for appropriate working heights of chairs, stools, workbenches, equipment
Explain need for adequate lighting
Explain use of anthropocentric design (e.g., centering one's view of everything around man)

Unit: Project Management

BIL: Essential

EDU:	12	AD	AC
	P	R	C,M

Competency: **Explain project management**

Competency Builders:

Identify project purpose/goal
Identify project objectives
Identify work breakdown structure (WBS)
Identify resource requirements
Identify project economics/funding
Identify risks

BIL: Recommended

EDU:	12	AD	AC
	I	P	M

Competency: **Plan projects**

Competency Builders:

Apply responsibility assignment matrix (RAM)
Apply Gantt or bar charts
Apply network diagrams
Apply critical path method (CPM)
Apply project education and review techniques (PERT)
Apply software programs

BIL: Essential

EDU:	12	AD	AC
	P	R	C,M,S

Competency: **Implement projects**

Competency Builders:

Monitor project
Control project
Modify project

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Evaluate projects**

Competency Builders:
Analyze performance
Perform critical review of project
Draw project management conclusions

BIL: Recommended

EDU:	12	AD	AC
	I	P	C

Competency: **Write project summary**

Competency Builders:

List project goals

Document project's key successes

Document project's key failures

Analyze costs vs. accomplishments

Unit: Problem Analysis

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Appraise situations**

Competency Builders:

Identify concerns

Set priorities

Identify resolution process

Plan resolution

BIL: Recommended

EDU:	12	AD	AC
	I	P	S

Competency: **Analyze problems**

Competency Builders:

Identify potential problems
Identify likely causes
Test for probable causes
Verify cause
Identify preventive actions
Identify contingent actions

BIL: Recommended

EDU:	12	AD	AC
	I	P	S

Competency: **Analyze decisions**

Competency Builders:
Identify objective(s)
Identify alternatives
Evaluate alternatives
Assess risks
Make final choice
Determine effectiveness of decision
Document results

Unit: General Administrative Functions

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Maintain work flow**

Competency Builders:

Organize work
Prioritize work
Apply time-management techniques
Complete assigned tasks in a timely manner
Coordinate with team members

BIL: Recommended

EDU:	12	AD	AC
	P	R	C

Competency: **Perform telecommunications operations**

Competency Builders:

Display telephone etiquette
Operate equipment
Listen assertively
Verify information
Record messages
Place calls
Organize teleconferences
Use voice mail/messaging systems
Operate fax/modem machine
Use e-mail systems
Use Internet communications services
Use videoconference facilities

BIL: Recommended

EDU:	12	AD	AC
	P	R	

Competency: **Perform scheduling functions**

Competency Builders:

Create calendar/schedule

Maintain and use appointment calendars with accurate addresses and phone numbers

Process requests for appointments

Verify appointments

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: Manage records

Competency Builders:

Implement filing system
Implement retention system
Perform electronic filing operations
Maintain inventory records
Retrieve files

Unit: Economic and Business Principles

BIL: Essential

EDU:	12	AD	AC
	I	P	M

Competency: **Describe basic economic concepts**

Competency Builders:

Identify importance of economic resources
Explain concept of economic resources
Explain importance of economic resources
Explain concept of economic goods and services
Differentiate between economic goods and services
Differentiate between needs and wants
Explain concept of supply and demand
Explain concept of price
Explain how supply, demand, and price are related
Explain concept of private enterprise and business ownership
Explain concept of profit
Explain concept of risk
Explain concept of competition
Explain relationship among risk, competition, and profit
Describe global economic and world markets
Describe economic cycles (e.g., unemployment, recession, inflation, budget deficits)

Describe economic arena's effect on business (e.g., financial, competitor indicators, industry)

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Describe economic systems**

Competency Builders:

Describe free enterprise system

Describe relationship between government and business

Describe relationship between labor and management

Compare types of economic systems

BIL: Essential

EDU:	12	AD	AC
	I	P	M

Competency: **Understand income statement data**

Competency Builders:

Identify revenue
Identify overhead expenses
Identify fixed expenses
Identify direct labor
Identify indirect labor
Identify direct and indirect materials
Identify general and administrative expenses
Identify selling expenses
Identify net income

BIL: Recommended

EDU:	12	AD	AC
		P	M

Competency: **Explain equipment depreciation**

Competency Builders:
Explain straight line
Explain sum of year's digits
Explain declining balance
Explain IRS strategies

BIL: Essential

EDU:	12	AD	AC
	I	P	M

Competency: **Identify cost and profit influences**

Competency Builders:

Explain importance of loss prevention
Explain importance of maximizing quality
Explain importance of maximizing productivity
Differentiate between specialized training and cross training
Explain labor, management, and government influences on cost/profit
Explain cost/profit influences of retraining
Define impact of seasonal business cycles

BIL: Recommended

EDU:	12	AD	AC
	I	P	M

Competency: **Describe economic indicators and trends**

Competency Builders:

Define gross national product and gross domestic product
Define national debt
Define impact of interest rates
Define impact of government spending
Define impact of seasonal business cycles
Define impact of inflation, growth, recession, and unemployment
Define impact of national and world events
Define impact of the growth of international trade

BIL: Recommended

EDU:	12	AD	AC
	I	P	M

Competency: **Explain international trade**

Competency Builders:

Describe nature and importance of international trade
Explain marketing in international trade
Explain balance of trade concepts
Describe impact of foreign investment
Describe the influence of national debt
Describe the effect of currency exchange rates on international trade

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Explain basic business concepts**

Competency Builders:

Identify functions of business
Explain role of management
Explain role of labor
Explain concept of service as a product
Explain role of administration
Explain role of operations
Identify role of company objectives
Identify importance of ethical business practices
Identify types of ownership
Identify components of a business plan
Calculate break even and payback
Explain role of depreciation in business decisions
Explain role of capital gains
Describe business reporting and information flow
Map interface of departmental functions
Describe business communication channels (e.g., formal, informal)
Explain basic total quality management (TQM/ISO) principles
Explain the effects of bankruptcy

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Explain legal concepts**

Competency Builders:

Define legal terminology

Explain business law concepts

Identify contracts and/or legal documents

Explain relationship of laws and regulations to company contracts, policies, and procedures

Identify laws relating to working conditions, wages and hours, civil rights, social security, disability, unemployment insurance, and exempt vs. nonexempt

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Explain role of marketing**

Competency Builders:
Identify aspects of sound business image
Explain purposes of marketing
Describe functions of marketing
Describe effects of marketing
Identify target markets
Define sales potential
Explain pricing strategies
Differentiate among advertising campaigns
Explain functions of advertising agencies
Describe sales incentive programs
Differentiate among types of marketing strategies (e.g., phone, mail, person)

Unit: Basic Computer Concepts and Applications

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Describe personal computer operations**

Competency Builders:

Explain how data is stored in main computer memory
Explain how computer system executes program instruction
Explain computer storage capacity
Explain how data is represented
Describe data storage devices
Identify types of memory
Describe back-up and archival disciplines

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Explain information processing cycle**

Competency Builders:

Describe computer languages and their use (e.g., machine, postscript, proprietary, graphic description)

Describe difference between data files and program files

Explain PC/Mac layout

Explain PC/Mac network layout

Explain mini/mainframe network layout

Differentiate among hardware, software, and firmware

Differentiate between open from proprietary architecture

Explain upload/download

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Explain operating systems**

Competency Builders:

Identify operating systems and their attributes (e.g., DOS, Unix, Macintosh, Windows)
Describe compatibility issues
Identify cross-platform file conversion tools
Describe how commands handle tasks in operating systems
Describe various input/output systems
Describe the purpose of operating system utilities
Differentiate between a compiler and an interpreter

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Demonstrate basic computer literacy**

Competency Builders:

Create directories/folders and sub-directories
Format disks
Manipulate files (e.g., copy, rename, delete)
Keyboard proficiently by touch

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Operate computer hardware**

Competency Builders:

Practice proper media handling techniques (e.g., magnetic fields, dust, liquids)

Identify hardware and its use

Use hardware (e.g., printers, modems, touch screen, digitizers, plotters, graphic tablets, scanners, film recorders, video, laser image setters)

Demonstrate basic care of hardware

Explain need for and application of security levels/procedures

Perform basic hardware troubleshooting

Explain hardware addressing techniques

Maintain usage and maintenance logs

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: Explain operation of peripheral devices

Competency Builders:

Identify peripherals and operating requirements of each

Identify primary devices used for personal computer auxiliary storage

Describe how data is stored on diskettes and hard drives

List speed and storage capacities of computer auxiliary storage devices

Describe attributes of diskettes and hard disks regarding speed and storage capacity

List types of disk storage used with large computer systems

Define role of tape storage in relation to personal and large computers

Describe security issues

Explain purpose of input devices (e.g., keyboard, mouse, scanners, pens, bar code readers, credit/debit/smart cards, voice, video, gloves)

Describe operation of output devices (e.g., voice, speaker output devices, printers, plotters, printer sharing units, SCSI interface, video display)

Describe operation of multimedia (e.g., video, audiosound)

Describe operation of storage devices (e.g., tape, disk, CD-ROM)

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Operate peripheral devices**

Competency Builders:
Use appropriate reference materials
Load media devices
Start media devices
Unload media devices
Import, edit, and export video and audio
Set up print devices
Operate scanner devices
Operate print devices
Maintain print devices
Monitor peripheral equipment operations
Perform routine maintenance on peripheral devices
List appropriate control procedures
Transmit via modem
Receive via modem
Search a CD-ROM library
Print information from a CD-ROM library
Describe device driver

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: Store media

Competency Builders:

Identify need for data library

Retrieve stored media (e.g., on-line, off-line, permanent, off-site)

File stored media (e.g., on-line, off-line, permanent, off-site)

Initialize media

Catalog media

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Explain software applications**

Competency Builders:

Define software types and functions

Describe need for application software

Describe different types of software applications

Explain advantages and disadvantages of integrated and dedicated software

List software sources

Explain software copyright laws

Explain data compression techniques

Explain use of passwords/security

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Use word processing packages**

Competency Builders:

Define word processing terminology
Explain functions of word processing software
Explain word processing applications
Use appropriate reference materials
Keyboard efficiently by touch
Use mouse
Initialize diskette
Prepare backup file
Maintain backup file
Update spelling dictionary and spell check
Perform document functions (e.g., locate, rename, delete, save, retrieve, copy)
Perform formatting functions (e.g., center, underline, bold, cut and paste)
Use edit features
Use sort features
Add page numbers to document
Add headers and footers

Print files, pages, screens and blocks of text
Verify accuracy of output
Create a document
Save a document to disk
Retrieve a document from disk
Edit an existing document
Describe word-wrap
Print a document
Store boilerplate material (e.g., templates, stationary files)
Compose documents at keyboard
Tabulate multiple columns
Prepare new documents from existing ones
Merge selected copy with new information
Prepare various types of table options
Format text
Integrate database, spreadsheet and graphic files
Convert documents from one system to another
Demonstrate use of computer thesaurus
Use multimedia techniques/resources
Perform merge functions

BIL: Essential

EDU:	12	AD	AC
	I	P	M

Competency: **Use spreadsheet packages**

Competency Builders:

Define spreadsheet

Demonstrate knowledge of basic spreadsheet terminology

Define components of spreadsheets

Describe implementation of spreadsheet operations in business scope

Use spell check

Execute an electronic spreadsheet

Enter data, formulas, and functions

Differentiate between labels and numbers

Speculate using "what if..." questions

Sequence keystrokes in the creation of a macro

Create database within spreadsheet and perform data query functions

Move around in spreadsheet and correct errors

Format spreadsheet

Create graphs

Print graphs

Save previously saved files

Load previously saved files
Replicate cells using copy commands
Use electronic spreadsheet to complete business application
Use spreadsheet to plan financial strategies
Prepare spreadsheet
Use multimedia techniques/resources

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Use databases**

Competency Builders:

Define database

Explain terms used in database systems

Describe common functions of database systems

Use database to create, input, edit, and display fields and records

Analyze structure of database files

Perform calculations with a database file

Alter structure of database file

Sort records based on multiple fields

Identify advanced database technology

Use appropriate reference materials

Utilize relational database

Enter elements into database

Proofread database

Explain database

Design report formats

Transfer data to and from remote database

Print reports using data from multiple databases

Use database files with other application software
Verify accuracy of output (e.g., edit reports)

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Use graphic user interface (GUI) techniques**

Competency Builders:

Describe a variety of computer interfaces

Explain multi-tasking environment

Setup data exchange between two different applications

Setup an object link between two different applications

Explain the use of dynamic link libraries

Transfer data from instruments to other computers

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Manage software packages**

Competency Builders:

Install software packages
Upgrade software packages
Document installation and upgrade of software packages
Apply security levels/procedures to sensitive data
Understand software memory allocation
Manage software preferences
Manage software conflicts

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Maintain computer security requirements**

Competency Builders:

Apply business ethics
Follow security rules, regulations, and codes
Implement security procedures
Document security procedures
Perform security checks

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Maintain personal computer systems**

Competency Builders:

Monitor system status and performance
Run diagnostics
Report computer system malfunction(s)
Report software malfunction(s)
Fix recoverable files
Maintain security
Maintain computer log
Perform backup procedure(s)
Perform preventive maintenance
Follow log-off and power-down procedure(s)
Follow equipment maintenance procedures
Follow quality control procedures

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Demonstrate basic knowledge of networks**

Competency Builders:

Explain communications standards
Describe network structures
Explain network types and protocols
Explain network connectivity
Explain the function of servers in a graphic network
Describe various network operating systems
Explain the difference between network software and individual use software
Use a network to access, file, and store files

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Use a shared environment**

Competency Builders:

List purposes of a network environment
Define electronic mail
Identify advantages and disadvantages of electronic mail
Describe impact of local & wide area networks on mal delivery
Compose electronic messages
Send electronic messages using appropriate format
List categories of electronic mail service
Transmit document using electronic mail system
Monitor electronic mail
Use networked environments
Search database for properties of materials
Conduct literature searches using a variety of on-line ools
Explain access, security, transmission and retrieval

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate knowledge of the Internet**

Competency Builders:

Define the Internet
Explain how the Internet works
Explain Internet capabilities and limitations
Explain how to connect to the Internet via modem, ISDN, etc.
Install Internet software
Navigate the World Wide Web
Identify services and tools offered on the Internet
Use services and tools offered on the Internet
Explain bookmarks

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Use the Internet for research**

Competency Builders:

Define how the Internet can be used for research

Use services and tools offered on the Internet for research

Identify search engines

Use search engines

Evaluate Internet resources and accuracy of information

Access library catalogs on the Internet

Access commercial and government resources

Download files

Unit: Customer Relations

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate positive relations with customer(s)**

Competency Builders:

Identify importance of customers to business
Differentiate between customer needs and wants
Explain principles of customer service
Provide prompt and courteous service
Resolve customer inquiries and complaints and/or refer customer to appropriate person
Identify methods of addressing dissatisfied customer(s)
Develop rapport with customer(s)
Identify opportunities to provide additional services to customer(s)

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Meet customer needs and expectations**

Competency Builders:

Clarify job requirements with customer(s)

Prepare quote/estimate

Create job files

Serve as liaison between customer(s)and technical staff

Define appropriate production procedures and processes

Explain company services, equipment capabilities, limitations, and workflow

Evaluate project

Provide feedback to customer(s)

Differentiate between preliminary proof and contract proof

Obtain customer(s) approval for all proofs at appropriate stages in the production process

Document job information (e.g., work orders, quotes, job tickets)

Notify customer of changes in schedule and costs

Manage scheduling conflicts in schedule

Develop continuous customer satisfaction feedback

Use negotiation skills to resolve conflicts with customers

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Manage project budget and timeline**

Competency Builders:

Document customer(s)-requested changes

Communicate impact of requested changes on budget and timeline to customer(s)

Advise customer(s) of alternative production techniques

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Target account opportunities**

Competency Builders:

Research the customer
Determine needs through effective questioning
Access right information
Sell benefits of product/service
Draw up sales contract
Resolve mistakes, misunderstandings, and author changes
Set deadlines

Unit: Market Research

BIL: Essential

EDU:	12	AD	AC
	I	P	C,M

Competency: **Describe market research**

Competency Builders:

Describe market research as both a formal and informal process

Identify common market research activities and the type of information each provides

Differentiate between primary and secondary sources of market research information

Differentiate between qualitative and quantitative sources of market research information

Match primary and secondary sources with their advantages and disadvantages

Explain factors limiting market research (e.g., objectives, level of commitment, resources available)

Identify the steps of market research

BIL: Recommended

EDU:	12	AD	AC
	I	P	C

Competency: **Use the steps of market research**

Competency Builders:

Identify market research objectives
Identify limiting factors
Identify sources of information (e.g., primary, secondary, qualitative, quantitative)
Record appropriate data classifications
Evaluate statistical market potential
Evaluate non-statistical market potential
Rank the most promising potential markets
Conduct in-depth research
Conduct product/company specific research
Recommend target markets

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: **Describe considerations for specific research**

Competency Builders:

Identify and assess markets according to current and projected demand for like or similar goods or services

Identify and assess factors that could affect the sales potential of the market

Identify channels of distribution for the target market, including availability of methods and channels

Identify competitors in the target market

Identify potential barriers to profitable sales in the target market

BIL: Recommended

EDU:	12	AD	AC
		I	M

Competency: **Explain the use of market research tools**

Competency Builders:

Explain the basics of sampling

Differentiate among stratified, cluster, systematic, area, and random-digit sampling

Explain attitude measurement

Differentiate data among surveys and questionnaires completed over the telephone, by mail, and in person

Explain the purpose of experiments

Explain the purpose of observations

Differentiate internal from external research and the advantages and disadvantages of each

Identify errors in market research

BIL: Recommended

EDU:	12	AD	AC
	I	R	M

Competency: **Perform the research process**

Competency Builders:

Identify the need for information
Identify research objectives
Identify data sources
Identify or develop data collection forms
Design the sample
Collect data
Process data
Analyze data
Present results

Unit: Business Management

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Explain entrepreneurship**

Competency Builders:

Identify characteristics of entrepreneurs

Identify qualities and skills needed by business owners

Identify means of obtaining technical assistance

Identify advantages and disadvantages of owning a business

Identify personal risks of owning a business

Describe basic factors contributing to business success

Describe a franchise-dealer relationship

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Evaluate entrepreneurship as a personal or corporate goal**

Competency Builders:

Evaluate personal interests and resources (e.g., time, energy, skills)

Compare personal interests and skills with those necessary for entrepreneurship

Assess aptitude to become a successful entrepreneur

Identify motives for becoming an entrepreneur

BIL: Essential

EDU:	12	AD	AC
	I	P	C

Competency: **Develop a business plan**

Competency Builders:

List sources of information for starting a business
Classify local and state requirements for starting business
Identify risks of creating a new business
Differentiate among market characteristics
Analyze financing of business ownership
Develop marketing strategies

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: **Identify role of small business in the economy**

Competency Builders:

Identify factors that contribute to the success and failure of small business

Describe effects of supply, demand, profit, and competition on small business

Explain relationship of small business to a national (USA) and global economy

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: **Analyze how legislation affects business**

Competency Builders:

Identify legal issues faced by entrepreneurs
Describe the relationship between government and entrepreneurs
Explain the effects of regulation on the business operation
Identify when and how to obtain appropriate legal assistance
Participate in the legislative process
Utilize trade association resources

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: **Evaluate factors affecting business management**

Competency Builders:

Identify advantages and disadvantage of various types of ownership

Identify cooperative arrangements

Describe legal forms of retail businesses

Differentiate between various types of insuperable business risks

Describe social and ethical problems that affect business

Classify types of government regulations that affect business

Analyze current trends in business

List costs that must be considered when starting a business

Select best location and layout for a business

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Identify marketing mix**

Competency Builders:

Explain importance of having the right product
Explain importance of having the product at the right place
Explain importance of having the product with the right promotion
Explain importance of having the product at the right price
Explain importance of having the product at the right time

BIL: Essential

EDU:	12	AD	AC
	I	P	C

Competency: **Promote products and/or services**

Competency Builders:

Explain selling function

Explain promotion function

Describe relationship of sales to promotion

Describe how to plan for special events and public relations activities

Explain importance of maintaining a check on competitors' promotions

Identify factors used to select appropriate products

Prepare merchandise/buying plan

Maintain vendor information and select appropriate vendors

Identify selling price (M)

Keep abreast of merchandising trends

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Manage customer relations**

Competency Builders:

Identify advantages of customer services and accommodations
Identify advantages of attractive, comfortable facilities
Explain importance of price, quality, and variety
Use acceptable techniques in handling customer complaints
Develop customer audit

BIL: Recommended

EDU:	12	AD	AC
	I	P	M

Competency: **Explain financing methodologies**

Competency Builders:

Explain leasing
Explain stock ownership
Explain bond ownership
Explain convertible securities
Explain bank loans

BIL: Recommended

EDU:	12	AD	AC
		P	M

Competency: **Identify costs of financial services**

Competency Builders:

Classify revenue and expenses

Speculate on revenue sources and expenses

Identify start-up costs

Explain means of obtaining financial assistance

Explain importance of a sound credit rating

Outline long-range financial plans

Explain how sources of finance are used in business operations

Compare financial services available from financial institutions

BIL: Recommended

EDU:	12	AD	AC
		P	M

Competency: **Prepare financial records and reports**

Competency Builders:

Record receipts and payments
Adjust cash flow upon the introduction of a variable
Justify budget items
Record income and expenditures
Report employee records for audit and taxation purposes

BIL: Recommended

EDU:	12	AD	AC
		P	

Competency: Comply with government regulations

Competency Builders:

Identify sources of information and assistance

Identify regulations, licensing, and permits affecting business operations

Identify taxes affecting businesses

Develop policies of compliance

Develop emergency procedures

Monitor changing regulations

Unit: Business Law

BIL: Recommended

EDU:	12	AD	AC
	I	P	C

Competency: Demonstrate knowledge of labor law

Competency Builders:

Describe rights and responsibilities of parties to an employment contract

Identify state and federal laws dealing with employment

Identify protections available to employees

Identify issues related to casual contract labor

Identify issues related to hiring union employees

Identify relevant worker's compensation issues

Describe the role of OSHA

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: **Demonstrate knowledge of contract law**

Competency Builders:

Analyze elements of a contract

Differentiate between contracts that are transferable and contracts that are not transferable

Identify means of discharging contracts

Describe means of discharging contracts

Describe remedies available for a breach of contract

BIL: Recommended

EDU:	12	AD	AC
	I	P	C

Competency: **Demonstrate knowledge of corporation law**

Competency Builders:

Explain the different types of business structures (e.g., sole proprietorship, general partnership, limited partnership, corporation including subchapter S)

Describe how to form a corporation

Describe the difference between equity and debt securities

Identify the principle/agent relationship and the basic terms of employment agreements

Identify special forms of corporations

Name corporation purpose and structure

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate knowledge of intellectual property rights and multimedia law**

Competency Builders:

Explain the various forms of intellectual property rights (e.g., copyright, patent, trademark, trade secrets)
Explain how to obtain a copyright
Explain how to obtain a patent
Explain how to obtain a trademark
Explain the perils in acquiring content rights
Define the rights granted under copyright, patent, and trademark
Identify the implications related to electronic imagery
Define authorship
Explain work made for hire
Explain fair use
Explain court cases related to intellectual property rights
Explain First Amendment rights

Unit: Writing

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: Develop basic technical materials

Competency Builders:

Identify need for publication(s)
Define audience(s)
Define objective(s)
Define topic(s)
Develop time frame for project development
Locate sources of information
Interpret information
Review existing literature
Compile appropriate data (M)
Develop draft
Revise/edit draft
Apply rules of grammar and word usage
Write coherent sentences and paragraphs
Spell words correctly
Proofread
Group information

Prepare and revise outline(s)
Use word processing system
Define terminology
Match vocabulary to targeted audience
Explain ramifications of language translation
Specify type and style for illustration(s)
Prepare sketches, if applicable (M, C)
Write figures titles and photograph captions
Prepare tables and charts (M, C)

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Edit basic technical material**

Competency Builders:

Evaluate material for readability and correctness
Validate data (M, S)
Validate data in illustrations (M)
Edit illustrations
Seek evaluation of suggested changes

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: Use creative writing skills to write fiction

Competency Builders:

Explain the major components of a fictional story (e.g., theme, style, setting, plot, character)
Discuss the use of literary devices
Evaluate writings of established authors
Write a short story
Explain the importance of revisions

BIL: Essential

EDU:	12	AD	AC
	I	P	C

Competency: **Use creative writing skills to write a script**

Competency Builders:

Explain the various script formats (Hollywood and Standard AV)
Determine audience
Determine objectives
Analyze project outline
Write a video treatment/synopsis to coincide with project outline
Develop a storyboard
Develop a master scene script with detailed account of each screen with characters and their dialogue

Unit: Appreciation of the Arts

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate an appreciation and basic knowledge of music**

Competency Builders:

Explain how musical elements relate to the meaning or content of a composition

Explain the feelings conveyed by various musical elements (e.g., thematic construction, tonal color, instruments, texture, volume, tempo)

Explain the role of music in different historical periods

Explain the role of music in contemporary living

Explain the function of music in different cultures

Identify the basic physical properties of sound (e.g., pitch, intensity, duration, and timbre)

Explain the various elements of music (e.g., rhythm, melody, harmony, tone, color, and form)

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Demonstrate an appreciation and basic knowledge of visual art**

Competency Builders:

Contrast the visual art styles of various historical periods

Define various forms of visual art

Explain the various elements of visual arts (e.g., lines, colors, light and dark, texture, volume, perspective)

Explain the feelings conveyed by various elements of visual arts

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Explain the interaction of music and visual art**

Competency Builders:

Define music visualization

Explain how to combine music and visuals to evoke emotional responses

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate an understanding and appreciation of literature**

Competency Builders:

Explain the basic themes used in literature

Identify the basic styles/genres of literature

Identify the basic elements of a story (e.g., plot, characters, setting)

Discuss the use of various themes and styles in interactive stories

Unit: Programming

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Explain computer applications**

Competency Builders:

Explain hardware component functions

Describe major types of software and their functions

Describe batch processing

Describe interactive processing

Describe event driven, object oriented processing

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Prepare to write computer applications**

Competency Builders:

Use appropriate reference materials
Analyze specifications
Identify constraints
Identify programming language
Identify input and output (I/O) requirements
Prepare logic using program-flow diagram

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Explain programming theory**

Competency Builders:

Explain the meaning of "reserved word"
Describe arrays and tables (M)
Explain compilers
Differentiate between system documentation and user documentation
Describe what is mean by top-down design and structured programming
Identify the steps in the program development cycle
Identify the steps and procedures required to develop test data
Explain iteration (looping)
Describe what is meant by data validation
List rules for naming variables

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Apply programming theory**

Competency Builders:

Demonstrate use of variables
Write source code per standards
Use spacing charts to plan program output
Code a modular program
Interpret a simple pseudocode design
Create a flow-chart
Utilize program sorts
Demonstrate use of loops
Demonstrate use of local operators (e.g., AND, OR, NOT)
Code error-handling techniques
Demonstrate use of data files

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Write a computer program**

Competency Builders:

Follow algorithm to produce desired output (M)
Use variables (M)
Write sub-routines
Use conditional statements
Use functions, including library, user-defined, and string functions
Write arithmetic statements (M)
Write IO statements
Write internal documentation

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Test programs**

Competency Builders:

Use debugging statements and tools

Debug syntax errors

Create test data that checks logic and error routines

Execute program with test data

Correct logic errors

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate knowledge of authoring software for multimedia projects**

Competency Builders:

Compare the advantages and disadvantages of various authoring software packages

Choose the most appropriate authoring software for the project

Author a program using authoring software

Use programming knowledge to solve authoring problems

Unit: Introduction to Interactive Media

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Demonstrate a basic knowledge of interactive media**

Competency Builders:

Define interactive media

Identify major characteristics of interactive media presentations

Describe the important historical developments leading to contemporary interactive media

Describe various interactive media industry genres

Perform critical review of various interactive media end products

Identify rights, responsibilities and controls of various media

Interpret intellectual property laws involving interactive media

Explain the social and cultural implications of interactive media

Explain key criticisms of interactive media

Identify future trends in interactive media

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Explain the markets for interactive media**

Competency Builders:

Explain the concepts and uses of interactive media in sales and marketing

Explain the concepts and uses of interactive media in interactive advertising

Explain the concepts and uses of interactive media in K-12 education

Explain the concepts and uses of interactive media in corporate training

Explain the concepts and uses of interactive media in corporate communications

Explain the concepts and uses of interactive media in news

Explain the concepts and uses of interactive media in entertainment

Explain the concepts and uses of interactive media in distance learning

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Execute pre-production, production, and post-production tasks for the area of gripping**

Competency Builders:

Formulate strategies to properly utilize grip equipment during film/video production

Originate solutions to unique shooting problems

Organize pre and post-production routines

Analyze production requirements to determine grip equipment needs

Create required effects for lighting set-ups

Demonstrate safe work habits

Work as a member of a film production team

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Execute pre-production, production, and post-production tasks for the area of camera**

Competency Builders:

Analyze the aesthetic needs of a shot and accomplish them

Organize the proper care and handling of camera and camera assist equipment

Analyze the script for camera lens and shot requirements

Organize pre and post-production routines for film camera operation

Analyze production requirements to determine camera equipment needs

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Perform lighting activities for a video production**

Competency Builders:

Describe types of lighting fixtures
Identify parts of lighting fixtures
Distinguish various applications of stage lighting equipment
Design a standard lighting plot
Analyze and document lighting requirements for production
Set up appropriate lighting for a production
Describe functions of master lighting panel and dimmer board
Operate master lighting panel to dimmer board
Appraise maintenance needs for lighting equipment
Design special effects lighting

BIL: Recommended

EDU:	12	AD	AC
	I	P	

Competency: **Design scenery to the specifications required in a video production**

Competency Builders:

Design scenic plans to scale
Interpret scenic plans for the appropriate use of materials and hardware for scenic construction
Formulate design strategies for the construction of scenery
Create special effects scenery
Organize transportation of scenery to remote locations
Inspect and repair scenery as needed
Select and arrange stage props

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Operate video camera**

Competency Builders:

Tape under tungsten conditions
Tape under daylight conditions
Tape under backlight conditions
Tape while panning
Tape while zooming
Tape while tilting
Tape while simultaneously panning, tilting, and zooming with camera mounted on a tripod
Tape while simultaneously panning, tilting, and zooming using a hand-held camera
Play back tape on monitor
Identify the effect on a video camera of changing of setting in low light levels

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Identify video formats**

Competency Builders:

Differentiate among consumer, industrial, and broadcast grade video cameras

Describe camera formats

Differentiate among Betacam, VHS, 8mm, super VHS, and DV-Cam

Differentiate frame vs field modes

Identify image characteristics affected by camera choice

Differentiate among NTSC, PAL, and RGB video signals

Explain relationship of chip size to image size on film

Explain frame synchronization and time base correction

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Perform editing operations**

Competency Builders:

Describe operational parts of a video cassette editor
Explain linear vs nonlinear editing systems
Set up video cassette editor
Perform assemble edits
Perform insert edits
Edit using dissolves (A-B roll)
Add sound track
Add narration/voice over
Explain edit decision lists
Use edit decision lists

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Digitize video**

Competency Builders:

Explain the concept of digitized video

Explain digital video bandwidths and their implications

Use a video capture card and appropriate software to digitize video tapes

Edit digitized video (including transitions, special effects, computerized backgrounds)

Explain the compression of video files

Explain batch capture process

Use batch capture process

Unit: Audio Production

BIL: Essential

EDU:	12	AD	AC
	I	P	C,S,M

Competency: **Demonstrate a knowledge of audio recording and sound reinforcement**

Competency Builders:

Identify generally used instruments in modern pop-related recording
Describe basic acoustic principles and formulae
Explain the function and design of microphones
Use microphones effectively
Diagram signal flow throughout the recording chain
Use a mixing console with solid understanding of its input and output functions
Explain the properties of magnetic tape and the tape recorder
Edit tape recordings
Explain properties of analog and digital tape recording
Explain methods of analog and digital editing
Use editors effectively
Explain sound reinforcement techniques for live programs
Explain methods for mastering audio recordings

Produce master product as an audio tape product
Produce master product as a compact disc or DVD
Explain future technologies for audio recording
Explain analog signal processing and its applications
Explain digital signal processing and its applications
Explain digital audio bandwidths and their implications
Explain various computer hardware and software used in studio recording
Critique recordings

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Demonstrate a basic knowledge of digital audio production**

Competency Builders:

Identify current trends in electronic music
Explain MIDI
Explain digital synthesis
Identify computer music applications
Explain compression of sound files
Explain digital sampling
Identify potential markets for use of electronic music

BIL: Essential

EDU:	12	AD	AC
	I	P	C,S

Competency: **Create a sound track**

Competency Builders:

Evaluate performance needs
Evaluate technical resources
Interpret script information relative to film sound
Design sound score appropriate to production and post-production needs
Select sound material
Hire talent, if necessary
Work with talent
Determine proper microphone and speaker placement
Compose, by recording and editing, a sound tape for production
Use mechanical and electrical sound effects for productions
Describe audio-for-video recording devices (analog, digital)
Set up audio-for-video recording devices (analog, digital)
Operate audio-for-video recording devices (analog, digital)
Describe time-code system for audio-video synchronization
Set up time-code system for audio-video synchronization
Operate time-code system for audio-video synchronization
Describe parts of an audio mixing console

Operate audio mixing console
Create a MIDI sound score

Unit: Web Page Design

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Demonstrate a basic understanding of web pages**

Competency Builders:

Explain browsers

Explain how different browsers affect the look of a web page

Compare the various software editors available for designing web pages

Explain bandwidths and their implications (M)

Explain plug-ins

Define client

Define server

BIL: Essential

EDU:	12	AD	AC
	P		

Competency: **Demonstrate a basic understanding of HTML**

Competency Builders:

Define what HTML is

Explain the importance of HTML standards

Identify the difference between various versions of HTML

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Create a basic HTML document**

Competency Builders:

Identify the meaning and purpose of HTML tags
Open up a workspace to create a new HTML document
Use a text editor to create the basic HTML structure for a web page
Insert non-displayed comments into HTML files
Display document within a web browser
Make text modifications using the text editor
Identify the different levels of headings in HTML and the tags associated with them
Place different level headings within an HTML document
Identify the paragraph break tag in HTML
Insert paragraph breaks into the text of an HTML document
Cut and paste text
Insert a stylized footer at the bottom of a page
Format text
Create lists
Add graphics
Add animation

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Format page layout**

Competency Builders:

Create a solid color background

Calculate the hexadecimal code for a color value (M)

Change the color of text and hypertext link items

Create a textured background from graphic file

Create hard rule lines with different thicknesses for page dividers

Create hard rule lines with different widths for page dividers

Create hard rule lines without 3D shading for page dividers

Design a web page table with rows and columns of text in a gridded display (M)

Write the HTML for integrated layout schemes of text and pictures

Write the HTML for an invisible table that creates side-by-side columns

Create a table that has different colored cells

Explain interface design

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Add audio and video to a web page**

Competency Builders:

Explain streaming audio and video
Explain audio sweetening
Explain audio and video compression
Use HTML codes to add audio and video to a web page
Explain network audio and video administration

BIL: Essential

EDU:	12	AD	AC
	P .		

Competency: **Link documents**

Competency Builders:

Identify the function of URLs (Uniform Resource Locators)
Recognize the structure of a URL
Copy URLs from a web browser to an HTML text document
Write an HTML anchor to link to another document in the same directory as the first document
Write an HTML anchor to link to another document in a different directory as the first document
Write an HTML anchor to link to another Web document on the Internet
Write an HTML anchor to link to files
Write an HTML anchor that links to another section of the same document
Incorporate a graphic that acts as a hyperlink to another document
Explain the significance of a file called index.html on a WWW server
Create a hypertext link that will send an e-mail message

Explain the difference between client-side image mapping and server-side image mapping

Create an inline image that has different portions hyperlinked to other web pages, pictures, and other sites on the Internet

Create hyperlinks for use of plug-ins

Use plug-ins

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Create an organized web site**

Competency Builders:

Explain the advantages of short multiple web pages over a single, long web page

Determine logical points to split information into multiple web pages

Create a template file using a text editor

Make appropriate changes to template file to create individual pages

Integrate hypertext links into the text

Insert HTML codes for links between pages

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Demonstrate a basic understanding of programming for the Web**

Competency Builders:

Explain the purpose of web content delivery enablers (e.g., CGI, API, SSI)
Explain how to interface client/server
Explain client-side processing and its advantages/disadvantages
Identify security issues related to client-side processing
Identify various scripting languages (e.g., JavaScript, Visual Basic Script, ActiveX)
Explain the uses and advantages of various scripting languages
Use a scripting language to program a site

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Demonstrate a knowledge of web hosting**

Competency Builders:

Compare the advantages and disadvantages of running your own server vs using a server provider

Identify hardware requirements for a server

Identify server software options

Evaluate server providers

Establish a domain name

Explain TCP/IP (Transfer Control Protocol/Internet Protocol)

Upload files to the server

Publicize the site by submitting announcements to major search engines

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Identify web authoring software**

Competency Builders:
Identify available packages
Compare available packages
Compare available authoring methods
Identify cross platform issues

Unit: Interactive Media Production

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Develop project concept**

Competency Builders:

Determine purpose of the interactive media project
Determine the target audience
Determine objectives
Research the content
Use appropriate message design (e.g., instructional, informational, entertainment)
Determine the setting where it will be used
Determine the interactive media elements to be used
Determine degree of interactivity desired
Address issues of accessibility and ADA compliance
Develop timeline for completion
Develop budget for project
Write proposal (C)

BIL: Essential

EDU:	12	AD	AC
	I	P	C

Competency: **Meet client needs**

Competency Builders:

Determine client's needs and expected outcomes

Prepare cost estimate for client

Obtain client approvals throughout the project

BIL: Essential

EDU:	12	AD	AC
	P	R	

Competency: **Develop storyboard**

Competency Builders:

Make preliminary sketches showing placement of images and text, on screens

Show placement of buttons/navigational graphics

Add information on color schemes

Add information on lighting

Provide a sample screen

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Develop flowchart/navigational blueprint**

Competency Builders:

Develop flowchart with radial branching

Develop flowchart with linear branching

Develop flowchart with linking/non-linear branching

BIL: Essential

EDU:	12	AD	AC
	P	R	C

Competency: **Write script**

Competency Builders:

Describe music to be used

Describe video (still and motion)

Describe special effects (video and audio)

Write narration and actor lines

Describe scenes

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Combine the various elements of interactive media to produce an interactive media project**

Competency Builders:

Exhibit proficiency in visual design skills

Generate text for multi-image presentations (e.g., title slides, charts, graphs)

Create 2-D computer graphics

Create 3-D computer graphics

Create computer animation

Use photographic process to enhance interactive media presentation

Integrate the use of photographic special effects into interactive media presentations

Digitize photographic images for interactive media

Use image manipulation program to alter digitized images

Integrate photographically-derived images with hand-drawn graphic images

Hire talent, if necessary

Work with talent

Create video footage
Use computer video-editing software to digitize and edit video footage
Record sound track including narration, voice-overs, sound effects, and music
Integrate sound with visuals
Build in hotspots and interactive links
Use appropriate authoring software to synthesize available interactive media technologies into a unified presentation
Meet expectations of audience through interactive presentations
Test the product
Debug the product

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Create various interactive media applications**

Competency Builders:

Produce a computer-generated business publication (e.g., training materials, sales materials, annual reports, charts & graphs)
Produce a CD-Rom presentation
Produce an Internet presentation
Produce a web page
Produce computer generated video
Produce KIOSK
Set up video conferencing system
Demonstrate computer-to-computer collaboration

BIL: Essential

EDU:	12	AD	AC
	I	P	

Competency: **Maintain interactive media equipment**

Competency Builders:

Demonstrate proper care and handling of interactive media equipment

Perform pre-and post-production routines for proper presentations

Analyze equipment performance against industry standards

Troubleshoot simple equipment problems